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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

In the Matter of)

Replacement of Part 90 by Part 88)
to Revise the Private Land Mobile)
Radio Services and Modify the)
Policies Governing Them)

92-235 /
MM Docket No. ~~87-260~~

COMMENTS OF ASSOCIATION FOR MAXIMUM
SERVICE TELEVISION, INC.

Julian J. Shepard

SUMMARY

In these comments, MSTV endorses the Commission's proposed refarming of land mobile spectrum below 512 MHz. MSTV wholeheartedly supports the Commission's efforts to promote the efficient use of land mobile spectrum through the use of commercially available technologies, such as ACSB, 6.25 KHz narrowband FM, and digital modulation.

Land mobile system operators can achieve significant spectrum savings under the Commission's plan. Indeed, the Commission's reforms will produce a 300 to 500 percent increase in land mobile's channel capacity, thereby meeting land mobile's spectrum needs for both the present and the foreseeable future. The Commission should move forward expeditiously to implement its refarming program.

Although MSTV enthusiastically endorses the Commission's proposal to refarm land mobile spectrum below 512 MHz, MSTV believes that there is no reason to limit the refarming project to spectrum below 512 MHz. Obviously, all land mobile spectrum should be used efficiently. In its comments, MSTV urges the Commission to implement its refarming program throughout all of the spectrum dedicated to land mobile use. MSTV also believes that the Commission should implement its program most rapidly in the areas where it most needed: the major metropolitan areas.

The Commission's technical and engineering reforms also have substantial merit. MSTV supports trunking,

reductions in land mobile broadcast field strength, and consolidation of the Commission's land mobile user categories. However, MSTV urges the Commission to consider the use of minimum loading requirements in addition to these reforms. Minimum loading requirements are essential if the Commission wishes to ensure that land mobile spectrum is utilized efficiently.

Finally, the Commission should terminate the proceedings it instituted regarding additional sharing of television broadcast spectrum with land mobile users. Moreover, it seems clear that the time has come for the Commission to revisit the necessity of continued "sharing" in the 470-512 MHz band. Sharing in this band was never intended to be a permanent measure. With the additional channel capacity that refarming of land mobile spectrum will create, and the increased spectrum needs of television broadcasters caused by the advent of ATV, there is simply no good reason for the Commission to continue allowing land mobile system operators to "share" this spectrum with television broadcasters.

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FCC 92-469

In the Matter of)
)
Replacement of Part 90 by Part 88)
to Revise the Private Land Mobile)
Radio Services and Modify the)
Policies Governing Them)

PR Docket No. 92-235

**COMMENTS OF ASSOCIATION FOR MAXIMUM
SERVICE TELEVISION, INC.**

The Association for Maximum Service Television, Inc.
("MSTV") hereby files comments to the Notice of Proposed Rule
Making, PR Docket No. 92-235, released in the above captioned
docket on November 6, 1992 ("Notice").^{1/}

COMMENTS

I. MORE EFFICIENT USE OF LAND MOBILE SPECTRUM IS ESSENTIAL.

MSTV strongly supports the Commission's proposed
refarming of the land mobile spectrum below 512 MHz and its
proposal to increase spectrum efficiency in land mobile bands

and has specifically urged the Commission to investigate methods of improving the efficiency of land mobile spectrum use.^{2/} MSTV has demonstrated repeatedly that land mobile system operators could more efficiently utilize their allocated spectrum. Comments of MSTV, PR Docket No. 84-232, at 17, 26-27 (Nov. 19, 1985); Comments of MSTV, Gen. Docket No. 84-1233, at 1-3 (April 22, 1985); see also Hatfield II, at 13-20.

Obviously, the public interest is best served by requiring operators of land mobile radio systems to use the spectrum currently allocated for their operations in the most efficient manner possible. The efficient use of spectrum benefits all users, including the land mobile system operators themselves.

A. Implementation of the Commission's Proposed Reforms Can Be Accomplished Merely By Utilization of Well-Established Technologies.

The reforms the Commission is championing will increase channel capacity in land mobile spectrum by 300 to 500 percent. Hatfield I, at 37, 53-54; Hatfield II, at 14;

^{2/} See Reply Comments of MSTV, PR Docket No. 91-170 (March 16, 1992); Further Reply Comments of MSTV, General Docket No. 85-172 (July 31, 1987); Comments of MSTV, PR Docket No. 84-232 (Nov. 19, 1985); Comments of MSTV, Gen. Docket No. 84-1233 (April 22, 1985); see also G. Hamilton, G. Ax, D. Hatfield, & A. Miller, "A Plan for Meeting Public Safety Community Mobile Communications Requirements Through New Technologies and Advanced Spectrum Management Techniques" (August 1983) (Hatfield II); D. Hatfield, G. Ax, & A. Miller, "The Role of New Technologies and Spectrum Management in Meeting the Demand for Private Land Mobile Radio Telecommunications Capacity" (November 1982) (Hatfield I).

cf. R. Matheson, NTIA/ITS, Spectrum Conservation: Adjusting to an Age of Plenty (July 1992); NTIA, U.S. Department of Commerce, NTIA Spec. Pub. 91-23, U.S. Spectrum Management Policy: Agenda for the Future (Feb. 1991). Despite the enormity of these potential gains, they are not the least bit speculative; they will not require land mobile system operators to engineer new technologies and systems, but rather will simply require them to incorporate a technology and systems that have been readily available for many years.

Narrow band technologies, such as ACSB, 6.25 KHz narrowband FM, and digital modulation, have been in existence since the mid-1970s.^{3/} ACSB equipment has been commercially available at competitive prices since the mid-1980s. P. Gieseler, Implementing New Technology in the Land Mobile Radio Services 26-27 (1983); see Comments of MSTV, PR Docket 84-232, at 17 & 17 n.1 (Nov. 19, 1985); see also Hatfield II, at 15 & 15 n.10, 26. Indeed, as early as 1978, Commission staff members recognized that narrowbanding land mobile channels could be accomplished through the use of ACSB-based equipment. Gieseler, Implementing New Technology, at 26-27. The Commission Staff reported in 1983 -- some ten years ago -- that "it is broadly conceded that single sideband modulation

^{3/} Of course, the idea of a system like ACSB is significantly older still. In 1958, pioneering scientists posited the possibility of narrowband radio equipment. Hatfield II, at 14 & 14 n.9 (citing W. Firestone & H. Magnuski, "Application for Single Sideband for Mobile Communications," IRE Trans. on Vehicular Communications 48-54 (July 1958)).

can permit more intensive spectrum use than [25 KHz] FM." Id. at 27. In the very same report, the staff concluded that it would be possible to obtain "thousands of additional channels" by converting to narrower bandwidths. Id. at 28.

Because the proposed reforms are not technology forcing, the Commission should impose a relatively rapid implementation schedule.^{4/} Moreover, the Commission should impose the most rapid implementation schedule on major metropolitan areas, thereby relieving overcrowding in the areas that are most congested.

The Commission's current proposal will first refarm the bands that have been in land mobile use for the longest period of time; those under 512 MHz. However, MSTV believes that the Commission should focus more closely on how refarming can relieve overcrowding and congestion in the areas with the greatest overcrowding problems. Because the problem of overcrowding in the land mobile frequencies is most acute in major metropolitan areas, the refarming of land mobile spectrum should logically occur in these areas in all

^{4/} Simply put, the pace of refarming should reflect the fact that the technologies at issue are not new. The question before both the Commission and land mobile system operators today is not whether the technology exists to implement the new narrowband regime, but rather whether the will exists to implement well-established technologies. Had land mobile system operators incorporated ACSB technology when it became available or shortly thereafter, the present overcrowding problems would unquestionably be significantly less pronounced today. The Commission's proposed course of action, although long overdue, is a necessary and reasonable response to a long standing problem.

frequencies.^{5/} In areas where crowding is less pronounced,
the imperative for reform is less immediate though not less

enjoys the support of a majority of the land mobile community.^{2/}

However, mandating the use narrowband channels is only one part of the solution to overcrowding in the land mobile spectrum. The imposition of minimum loading requirements is an essential corollary policy. It makes little sense to address the wasteful use of spectrum in 25 KHz bandwidths by creating more channels and then allowing these new channels to lie fallow, or to be used inefficiently. See Notice of Inquiry, Docket No. 21229, 42 Fed. Reg. 26030, 26031 (1977). Minimum loading requirements are necessary to ensure that refarming not only eradicates the wasteful allocation of spectrum, but also to ensure the efficient use of the newly available spectrum.^{3/}

The Commission seeks comment on whether it should consolidate the present nineteen land mobile user categories into three broad categories. Notice, at ¶¶ 14-17. MSTV

^{2/} See, e.g., Comments of LMCC, PR Docket No. 91-170, at 3-4 (Jan. 15, 1992); Comments of the Utilities Telecommunications Council, PR Docket No. 91-170, at 46 (Jan. 15, 1992); Comments of NTIA, PR Docket No. 91-170, at 1-5 (Jan. 15, 1992), Comments of the Telecommunications Industry Association, Mobile Communications Division, Land Mobile Section, PR Docket No. 91-170, at 1-2 (Jan. 15, 1992).

supports such consolidation efforts because they will likely result in more efficient use of the land mobile spectrum.

MSTV does not have a strong preference as between the two specific proposals suggested in the Notice. Notice, at ¶ 17. On the one hand, MSTV believes that consolidation of all current services into three broad categories (Public Safety, Non-Commercial, and Specialized Mobile Radio) with a residual category could result in maximum utilization of available spectrum by reducing the transaction costs that arise from the present system of negotiated spectrum sharing between users within the current nineteen categories. On the other hand, such an approach might disrupt current sharing arrangements, some of which no doubt promote the efficient use of spectrum. It seems unlikely, however, that in the aggregate the efficiency gains realized from such sharing arrangements among existing land mobile users outweigh the potential increase in efficiency that consolidation of the current nineteen categories should produce.^{9/}

MSTV supports the Commission's proposal to mandate reductions in the broadcast field strength of some land mobile system operators. Notice, at ¶ 20. Reduced field strength will reduce land mobile interference with the operations of

^{9/} In particular, reduction of the number of land mobile user categories for both new and existing users will preclude any particular user or class of users from unreasonably refusing to share its channel(s). Although the present system does not encourage stonewalling, the nineteen category structure does not prevent it.

co-channel and adjacent channel spectrum users (including
broadcasters) and permit more frequent spectrum reuse. The
Commission's decision to limit effective radiated power (ERP)
to 300 watts for land mobile operators in the 150-174 and 450-

Band to Accommodate Local High Definition Television, General Docket No. 85-172, at 14 (Mar. 10, 1987); see also Association of Maximum Service Television Service, Petition for Inquiry (October 4, 1989); Comments of MSTV, General Docket No. 85-172, at 2-17 (July 11, 1986).

II. The Refarming Process Should Ultimately Include Land Mobile Spectrum in Bands Above 512 MHz and Also Include a "Give-Back" of Television Broadcast Spectrum Currently Allocated to Land Mobile Uses.

A. The Refarming of Land Mobile Spectrum Should Be Comprehensive.

As noted above, refarming land mobile spectrum below 512 MHz will increase channel capacity from 300 to 500 percent, depending on the final bandwidth selected for each channel. Improvements of this magnitude in the efficiency of spectrum use are all too rare. This is doubly so when significantly increased efficiency can be obtained by simply implementing an existing technology.

In light of the substantial benefits that accompany refarming land mobile spectrum, it is clear that the Commission should also refarm land mobile spectrum above 512 MHz. There is 40 MHz of spectrum in the 800 MHz band currently in use by land mobile stations, or more than 60 percent of the total land mobile spectrum. Although MSTV realizes that the Commission's ability to facilitate reform has limits, and that a necessary consequence of this reality is that the Commission must establish priorities for every reform program, there is simply no good reason for excluding

this spectrum from the current plan, particularly in the most congested markets. MSTV urges the Commission to include spectrum above 512 MHz in this proceeding, or at least to make clear that the refarming process will eventually include this spectrum.

B. Television Spectrum "Temporarily" Assigned for Land Mobile Use Should Be Returned to Use for Television Broadcasting.

In light of the significant spectrum savings that should be realized as a result of the Commission's reforms, the Commission should terminate the proceedings related to the allocation of additional broadcast channels for land mobile telecommunications. See In the Matter of Further Sharing of the UHF Television Spectrum by Private Land Mobile Radio Services., Gen. Docket No. 85-172, 56 Fed. Reg. 25587 (June 20, 1985); see also Order, 2 FCC Rcd. 6441 (1987). Given the spectrum needs created by the advent of ATV broadcasting and the Commission's apparent commitment to a rapid inauguration of ATV broadcast services, see Third Report and Order, 7 FCC Rcd. 6924 (1992), it is inconceivable that additional sharing is feasible.

In addition, the Commission should seriously consider taking back television channels located in the 470-512 MHz range that have been assigned to land mobile use in certain major markets. See Reply Comments of MSTV, PR Docket 91-170, at 3-5 (March 16, 1992); see also First Report and Order, Docket No. 18261, 23 FCC 2d 325, 341, 343 (1970).

At the time the Commission decided to initiate sharing, it observed that it was "committed to revising our rules and policies to introduce new technology and new allocation and assignment techniques into the land mobile communications to achieve spectrum efficiency." First Report and Order, Docket No. 18261, 23 FCC 2d at 331. Moreover, the Commission promised to "evaluate the sharing proposition" over time and described the sharing scheme as a "plan to provide short range relief." Id. at 341, 343. MSTV submits that the time has come for the Commission to reevaluate fundamentally the sharing of spectrum space between 470 and 512 MHz.

It is clear that the assumptions that led the Commission to initiate sharing of television broadcast spectrum in 1970 no longer hold true in 1993. Surely the 300
~~to 500 percent increase in land mobile channel capacity that~~

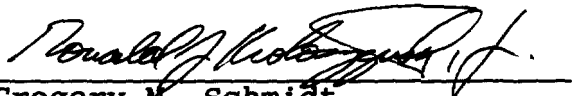
reforms. However, the Commission must complete the task that it has undertaken by refarming land mobile spectrum above 512 MHz.

The Commission's refarming proposals will clearly result in significant spectrum savings -- savings that will accommodate additional land mobile operations. Narrowbanding, in conjunction with other reforms, such as reduced broadcast strength, minimum loading requirements, and trunking, can effectively eliminate the overcrowding problems that some land mobile operators claim presently exist. With the advent of affordable, reliable narrowband equipment, it is accurate to say that land mobile users have their future in their own

hands. Reform is long overdue, and the Commission is to be commended for undertaking a comprehensive overhaul of land mobile spectrum below 512 MHz.

Respectfully submitted,

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